

Spray Park Public Health Risk, Summary, 2/14/19

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Spray parks have been associated with disease outbreaks (some summarized below). The risk is due to contamination of human waste (children in diapers) or animal waste (dogs or wildlife with access). Although viruses, bacteria, or parasites are a risk, disinfection with chemicals such as chlorine can be effective, if there is sufficient contact time to kill the organism. Spray parks may aerosolize waste into human faces before there has been enough contact time with a disinfectant to kill the organisms. Most disease outbreaks have been associated with the parasite *Cryptosporidium*, which is not killed by disinfection (but can be managed with filtration and UV radiation, depending on success of the system).

New York outbreak: August, Sept. 2005, *Cryptosporidium parvum*

Spraypark at Seneca Lake State Park near Geneva NY

https://www.cdc.gov/eis/downloads/2006.EIS_Conference.pdf (abstract, p. 31)

https://marlerclark.com/news_events/spraypark-lawsuit-gets-its-first-day-in-court

Abstract: 425 confirmed and 1,374 probable cases (lawsuit report lists more)

Organism found in two water storage tanks that supplied the 11,000 square foot park

Had a water-recycling system, filtration and disinfection insufficient to remove *Crypto* oocysts

NYSDOH regulations for recreational aquatic spray grounds developed after Seneca Lake outbreak (do not apply to a facility that discharges to waste without impoundment or recirculation of the water).

Requires fenced area with locked gate, personnel supervision, foot baths, bathrooms and bath houses, restriction of children in diapers, fencing to keep out animals, signage.

https://www.health.ny.gov/regulations/nycrr/title_10/part_6/subpart_6-3.htm

NYSDOH Recreational Aquatic Spray Grounds Safety Plan:

<https://www.health.ny.gov/forms/doh-4474.pdf>

Additional *Crypto* outbreak in Niagara County NY, Nov. 14-16, 2010, 12 cases, age 1-66

Authored by Hopkins J, Hague H, Hudgin G, Ross L, Moore D, J Environ Health, 2013 May;75(9):28-33

UV disinfection system was offline (shut down for maintenance) during the day on Nov. 14.

(article not directly available online, see separate download of article)

Idaho, August, 2007, *Crypto*: 5 lab confirmed and 45 clinically compatible cases:

<https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5822a2.htm>

Florida; August 1999: 38 cases meeting case definition, ages 2-65 years, *Shigella* and *Crypto*

<https://www.cdc.gov/mmwr/preview/mmwrhtml/mm4925a3.htm>

Subsequently added exclusion of children in diapers, signs advising showering first and avoiding water consumption; chlorine monitor to halt fountain automatically when residual chlorine levels were low; cartridge filtration system; mentioned *Crypto* being resistant to chlorine so filtration important; mentioned that disinfection is not instantaneous for bacteria

June 24-July 11, 1997; spray park at Minnesota zoo; 369 cases identified, *Crypto*

<https://www.cdc.gov/mmwr/preview/mmwrhtml/00055289.htm>